

cancelled claims 13 and 30 without prejudice and added new claim 33. Please reconsider the application in view of the foregoing amendments and the following remarks.

In the Office action dated January 29, 2002, the Examiner rejected claims 1-3, 10, 12, 15, 17, 20, 21, 29, and 31 under 35 U.S.C. § 102(b) as being anticipated by Hawkshaw. Applicants respectfully disagree and note that Hawkshaw discloses a loading mechanism for loading water into an aircraft, where the aircraft makes an "on the step" touch-down on the surface of a body of water (col. 7, lines 5-7). Such a configuration, as disclosed in Hawkshaw, fails to address an important problem solved by applicants' fluid loading system. Specifically, applicants disclose in the Background section of the present application:

Conventional FAA approved hose or "snorkel" devices are unsatisfactory for use with salt water because these snorkels require the helicopter to hover at a level that results in rapid loss of power due to salt accumulation in the engines. For example, U.S. Patent No. 3,897,829 discloses a helicopter equipped with a suction conduit that is designed to hang vertically below a hovering helicopter to load water from a source into an onboard tank. *A significant problem with this type of water suctioning device is that downwash generated by the rotor causes water from the source to splash onto the underside of the helicopter. This can be a serious problem when the source contains salt water because the salt may cause parts of the helicopter to rust and corrode.* Salt spray ingested into the engines can cause internal damage and result in a loss of power and eventually may cause total failure of one or both engines. Another problem with use of dangling hoses in ocean water is that the hose may bounce in and out of the water if the ocean is wavy or turbulent.

Accordingly, an object of the invention is to provide a system for loading fluid onto an aircraft from a salt water source without ingesting fluid into the aircraft engines. (emphasis added)

In contrast to applicants' fluid loading system, which enables loading the aircraft with minimal contact with the fluid source, Hawkshaw's loading mechanism requires that the aircraft touch-down on the surface of the water. Such a system inevitably leads to the

undersurface of the aircraft being sprayed with water, which may result in corrosion of various parts of the aircraft and/or ingestion of fluids into the aircraft engines. Moreover, unlike the present fluid system, the Hawkshaw loading mechanism is limited in its application because of the difficulties associated with performing an "on the step" touchdown in turbulent seas. For example, Hawkshaw's loading device could not be used practically to load water from rough seas.

The Examiner rejected claim 1 under 35 U.S.C. §102(b) as being anticipated by Hawkshaw. A rejection under 35 U.S.C. § 102 requires that each and every element of the rejected claim(s) be contained in a single prior art reference. Hawkshaw does not disclose all the elements recited in claim 1. Specifically, claim 1 recites a tube member having a proximal end and a distal end, where the distal end includes "a diving device that substantially maintains the distal end of the tube member below a surface of a fluid source while the aircraft translates over the fluid source." As described on page 5, lines 16-17, the diving device is described as "an inverted hydrofoil structure or other diving device 40 which helps to maintain tube member 24 in the fluid source." Hawkshaw does not disclose or teach any such diving device. In contrast, a portion of the loading mechanism in Hawkshaw is driven under the fluid source when the plane touches down on the water (col. 7, lines 5-10). There is no element in Hawkshaw that operates as a diving device to substantially maintain the loading mechanism in the water. Therefore, claim 1 and dependent claims 2-4 are not anticipated by Hawkshaw.

Applicants have amended claim 10 to incorporate the limitations of claim 13, which the Examiner indicated was allowable if rewritten in independent form. Applicants have

cancelled original claim 13. Thus, claim 10 and dependent claims 11, 12, and 14-19 are allowable.

Claim 20 also was rejected under 35 U.S.C. § 102(b) as being anticipated by Hawkshaw. Applicants have amended claim 20 to clarify that “the tube member is movable into a downward orientation for accessing a fluid source spaced away from the aircraft.” In Hawkshaw, the aircraft must touch-down on the surface of the water for the loading mechanism to function. The Hawkshaw loading mechanism is not configured to be used to access a fluid source spaced away from the aircraft. Therefore, amended claim 20 and dependent claims 21-24 are allowable.

Applicants also have amended claim 29 incorporating allowed claim 30 into original claim 29. Applicants have cancelled original claim 30. Thus, the rejection of original claim 29 and dependent claims 31 and 32 should be withdrawn.

Claims 11, 18, 19, 23, 24, and 32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hawkshaw in view of Nichols, Sr. (“Nichols”). Nichols discloses a pump system for a helicopter that is configured to pump water into a tank while the helicopter hovers over the water surface. There is no teaching or suggestion within the references to combine the Hawkshaw loading mechanism for an airplane with the helicopter pump system in Nichols. Additionally, claims 11, 18, 19, 24, and 32 are patentable for the same reasons already explained in relation to their respective independent claims. Thus, in light of the amendments and the discussion above, applicants respectfully request withdrawal of the § 103 rejections.

New claim 33 is directed to a fluid conduit device in which a tube member has a fluid inlet configured to remain entirely submerged in a fluid source while the aircraft translates over


the source. Hawkshaw teaches a "partially exposed" input end so that an airspace is formed in the stream of water passing through the probe. Claim 33 is patentable over the art of record.

The above amendments and remarks are believed to address fully the Examiner's rejections and to place the application in condition for allowance. If there are any questions or remaining issues, the Examiner is encouraged to contact applicants' attorney at the number listed below.

CERTIFICATE OF MAILING

Respectfully submitted,

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Box FEE AMENDMENT, Commissioner for Patents, Washington, D.C. 20231 on July 1, 2002.


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Date of Signature: July 1, 2002

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